

## 3.3.8 Wildlife: Recreation Impacts

### 3.3.8 Wildlife Recreation Impacts (Indicator 25)

This wildlife indicator provides a general characterization and differentiation among alternatives relating to impacts associated with five facets of the recreation indicators:

- Public access on roads
- Motorized summer (ATV) trails - maximum miles of additional designated trail
- Motorized winter (snowmobile) trails - maximum miles of additional designated trail
- Cross country ATV and snowmobile use - level of use restriction
- Water Access - facility level of development

#### Scope of Analysis

The analysis area for each of the five facets of recreation impacts is on NFS land forest-wide on the Chippewa NF and is on NFS land outside the BWCAW on the Superior NF. (Also see the Recreation section discussions in Section 3.8 of this EIS.)

#### 3.3.8.a Affected Environment for Wildlife Recreation Impacts

Much of the recreation use on both Forests is tied to water and wildlife resources. Most campgrounds and campsites are located near water. Road access and trails frequently come within close proximity to lakes, rivers, and wetlands.

Recreation activities relating to water and wildlife, such as fishing, hunting, wildlife viewing, canoeing,

and boating, are popular on both Forests. Current inventories and discussions about use of road, trail, and facilities such as water access sites are discussed under the recreation sections 3.8.1, 3.8.3, and 3.8.4 of this EIS.

No systematic monitoring or surveys have been done to quantify the effect existing roads, trails, and water access sites, or cross country use by ATVs or snowmobiles, is having on wildlife. It is likely, however, that existing facilities and their use by the public do result in some localized wildlife impacts of the type described under *General Effects* later in this section. In addition, observation on both Forests suggests that ATV use on locations other than road or designated trails (that is, “cross-country” use) does occur and is causing site-level impacts. Cross-country use of snowmobiles also occurs on NFS land, but the amount of this use and associated wildlife impacts tend to be less than those associated with ATVs.

#### 3.3.8.b Environmental Consequences for Wildlife Recreation Impacts

##### General Effects Common to all Alternatives from Recreation

This section summarizes broad impacts on wildlife from general recreation use. An overview of recreation impacts to wildlife is provided first. More specific impacts to major categories of wildlife follow the overview. The wildlife categories discussed include birds, amphibians and reptiles, small mammals, ungulates, and carnivores. Information is based on a review of Youmans (1999).

The discussions on impacts use phrases such as “human activities” and “human disturbance”. Wildlife impacts from human activities and disturbance can

include: physical alteration of habitat; removal of vegetation or replacement of beneficial native species by disturbance-tolerant non-native species and noxious weeds; increased noise and other disturbance from the sight and sound of people. Noise was specifically mentioned by the public as a concern to wildlife. Noise is not discussed separately in this section because it is considered part of human disturbance. Finally, resource and social noise impacts may be analyzed in detail at site-specific project level analysis as needed. (Refer to this EIS section 3.8.3.b Noise and Emissions.)

Human activities can impact wildlife through exploitation, disturbance, habitat modification, and pollution. Disturbance caused by recreation pursuits or other human activities may elicit behavioral response and physiological responses in wildlife. The learned component of wildlife responses to humans has been attributed to the number and outcome of interactions between individuals and human stimuli during an individual's lifetime. An individual's response may also vary according to season, age and sex, body size, group size, motivational state, behavioral response of cohorts, and habitat security.

Behavioral responses are influenced by characteristics of the disturbance itself (type of activity, distance away, direction or movement, speed, predictability, frequency, and magnitude) and location (above versus below, in the open versus screened by topography or vegetation, as well as the tolerance of species or individuals or to disturbance. Wildlife behavior may take the form of avoidance, habituation, or attraction.

Behavioral response may be of short duration (temporary displacement) or long-term, such as abandonment of preferred foraging or breeding areas. Likewise, physiological responses that affect an individual's energy budget may result in death. At the population level, physiological responses may result in reduced productivity for some species.

Examples of some specific effects of recreational activities on wildlife include:

**Hunting:** Alteration of sex and age composition, behavior, reproduction, and distribution.

**Viewing:** Disturbance as a result of close encounters may alter behavior, cause changes in energy

expenditure, alter nest placement, and reduce survivorship of young (via abandonment or predation).

**Backpacking/Hiking/Cross-country**

**skiing/Horseback Riding:** Flight increased stress, and displacement.

**Boating:** Can alter roosting or foraging habitat of waterfowl, wading birds, and raptors; flushing of birds from nests may result in egg breakage; changes to riparian vegetation, bank stability, and water quality can affect semi-aquatic mammals.

**RMVs:** May cause disturbance (flight and stress) and redistribution.

**Bird** species represent a varied collection of organisms with key roles in ecological systems. Avian species react differently to the presence of recreationists. A continuum of responses exists: at one extreme end some species may benefit from presence (for example, gulls who take advantage of human refuse or discarded fish remains); some species may habituate to or tolerate presence; and, at the other end, some species may be adversely affected by or intolerant of human presence and abandon their habitat. Reactions vary also within a species, depending on breeding status, activity (such as foraging, roosting, dispersal), species' size, and group size. Birds respond to human activity by altering their behavior, spatial distribution and use of habitats. Effects on breeding birds during incubation can include nest desertion and temporary nest abandonment, which results in exposure of the eggs to temperature extremes and predators. Disturbance during brood rearing can result in trampling of eggs or neonates, premature fledging, and separation of young from parents. Outside of the breeding season, bird activity is focused on energy gain for winter and migration. Human disturbance during this period may cause changes in foraging habits and changed foraging efficiency.

Through their interactions with other organisms, **amphibians and reptiles** are key components of many ecological systems. Although recreational impacts on herpetofauna have been little studied, the scientific literature provides several examples of factors often associated with recreation that do affect amphibian and reptile populations. Non-indigenous species can directly affect herpetofauna via competition and predation, and can indirectly affect herpetofauna

through their management. For example, introduced fishes and bullfrogs may prey on or out-compete native amphibians and reptiles and piscicides, herbicides, and pesticides used to control non-indigenous species are known to negatively impact populations of herpetofauna. Road traffic and off road vehicle use directly kill herpetofauna and indirectly impact populations by creating migration barriers, altering habitats, and increasing sedimentation and chemical contamination. The development of recreational facilities and water impoundments may result in the loss of key breeding, foraging, and overwintering habitats for some herpetofauna, though impoundments may create habitat for others. Harvesting and collecting can have extremely negative impacts on herpetofauna populations and the general loss of habitat may lead to fragmentation and disruption of metapopulation dynamics.

**Small mammal** populations are an important but often overlooked component of ecological communities. Based on the literature, it is apparent that recreationists can affect wildlife through direct disturbance of normal activities. Areas of OHV use can have fewer species of vertebrates, greatly reduced abundance of individuals, and noticeably lower small mammal biomass. This has been found to be inversely related to level of OHV use in the area. The potential impacts of OHV use on small mammals generally are more directly related to the impacts on vegetation, soil, and barriers created by roads and trails. For some species of small mammals, just the presence of humans may have adverse impacts. Recreational shooting of species considered to be “varmints” can also be a concern.

**Ungulates** provide a large percentage of the recreational opportunities for wildlife enthusiasts in the State. Hunting, wildlife viewing, and photography generate economic benefits. However, recreational activities have the potential to displace ungulates and may have direct and indirect effects to the populations as a whole. During winter, many ungulates are seasonally confined to restricted geographic areas with limited forage resources. In these conditions, physiological adaptations and behavioral adaptations tend to reduce energy requirements. Despite lowered metabolic and activity rates, most wintering ungulates normally lose weight. Responses of ungulates to human recreation during this critical period range from

apparent disinterest to flight, but every response has a cost in energy consumption.

Snowmobiles have received the most attention compared to other wintertime disturbances, and the majority of reports dwell on negative aspects of snowmobile traffic. However, when ungulates are habituated to snowmobile traffic, snowmobiles appear less distressing than cross-country skiers. For several ungulate species, the greatest negative responses were measured for unpredictable or erratic occurrences. In addition to increasing energy costs for wintering animals, recreational activity can result in displacement to less desirable habitats, or in some situations, to tolerance of urban developments. Tendencies to habituation vary by species, but habituated ungulates are usually undesirable.

During summer, the biological focus for ungulates includes restoring the winter-depleted body condition and accumulating new fat reserves. In addition, females must support young of the year and males meet the energy demands of antler growth and competition for breeding success. The potential for impacts increase and options for acquiring high quality nutrition, with the least possible effort, decline as the size of the area affected by recreationists expands to fill an increasing proportion of the summer range. Disturbance of the highly productive seeps and wet sites may cause animals to withdraw to less productive areas. Persistently high levels of recreational use and the proximity to human population centers is predicted to impact reproductive performance of ungulate populations, but little direct research at this level of disturbance has been reported.

Recreational traffic on and off roads has been linked with high rates of establishment and spread of noxious weeds in wildlife habitat. Summer forage is very important to most ungulate populations. Big game hunting has more immediate effects on ungulate population densities and structures than any other recreational activity. Hunting season security and management affects short and long term hunting opportunities.

Managers of public lands control only a few of the potential variables that contribute to security; including retention of important vegetative cover, travel management, and enforcement of travel regulations. There is a strong relationship between

adequate security and predicted buck/bull carryover, but excessive hunter numbers will overwhelm any level of security. Hunting also has the potential to alter herd productivity as mature males are harvested from populations.

**Carnivores** have a wide variety of responses to human recreation. Some species like skunks, raccoons, and coyotes have adapted to the presence of humans and to human activities including recreation. These species have been and will probably continue to be impacted only in localized areas of intense recreational or developmental activity. For other species, human recreational activities are documented or suspected to have adverse impacts. Some carnivores like black bear, Canada lynx, gray wolf, fisher, and marten, are subject to hunting and trapping either directly or incidental to hunting and trapping efforts for other species.

## Effects of Recreation Common to all Alternatives

Further analysis on recreation-related impacts to threatened species (bald eagle, gray wolf, and Canada lynx) is also addressed in the Biological Assessment (USDA Forest Service 2004b) and Chapter 3.3.4 of this EIS..

### Public Access on Roads

Roads can affect wildlife and habitat in several ways. All roads disrupt habitat continuity to some degree, depending on the road type. Low standard, low use roads (OML 1 and OML 2) may only be the width of a single vehicle, with native material for surfacing, and sometimes with vegetation growth in the roadbed. This type of road offers a minimal break in habitat for most species. Some higher standard roads are wider and surfaced with crushed gravel (generally, OML 3 and OML 4). These roads may inhibit migration for species with limited dispersal capabilities, such as small mammals and amphibians. Other roads are paved, with a wide roadbed and right-of-way clearing (generally OML 5). These roads can alter or inhibit migration of more wildlife species and cause noticeable vehicle mortality. Higher standard, wider roads can also break up larger areas of interior habitat, potentially affecting area-sensitive species.

Road systems have a wide variety of impacts on wildlife species habitats, some neutral, some positive, and some negative. Roads act as linear openings which can provide edge habitats, which enhance habitats for some species and are detrimental to others. Roads also provide sand or gravel sources for species requiring them for feeding, nesting, or burrowing. Roads can enhance movement of species, and this can be positive or negative for some species. Plowed roads also can improve access of some intraspecific species through the provision of access that would not be normally available to some species. Roads do contribute to forest fragmentation. Roads can block movements of smaller animals, such as the wood turtle and amphibians, resulting in impaired migrations. (ARDC 2002a)

Roads can have a direct effect on wildlife mortality. Vehicle/wildlife collisions can occur. Amphibians are particularly vulnerable when crossing roads during seasonal migrations. During snowfree seasons ditches and rights-of-way often attract deer to preferred foraging habitat, thus increasing potential for collision. Road-killed deer then become food for other species such as ravens, eagles, or wolves, increasing their vulnerability to collision. Roads also can be preferred nesting sites for turtles putting them in jeopardy of demise. Finally, roads can be used as travel corridors for many species. (ARDC 2002a)

### Motorized Summer (ATV) Trails - maximum miles of additional designated trail, and Motorized Winter (snowmobile) Trails - maximum miles of additional designated trail

Negative effects to wildlife resulting from additional designated motorized trail on the Forests can include the physical alteration of habitat, the removal of vegetation or replacement of native species by disturbance-tolerant exotics and/or noxious weeds, increased noise disturbance, a reduction in habitat security, and (in some instances) direct injury or mortality. These effects are more pronounced on species with low tolerances for human disturbance, on habitat specialists, and on species with highly localized populations or generally low population levels. (USDA 1998e) Given the current habitat conditions of areas where motorized trails could be located, it is unlikely that any species would be

affected at the population level in any of the alternatives.

### **Cross-country ATV and Snowmobile Use - level of use restriction**

Cross-country ATV or snowmobile use can stress wildlife, displacing animals away from areas used by ATVs or snowmobiles and resulting in the altered expenditure of energy (to escape the noise and disturbance, increased competition for resources (when animals become concentrated in the remaining disturbance-free areas), and reduced reproductive success (if disturbance occurs during critical mating and/or brooding periods). Vegetation which serves as food and shelter for wildlife can be altered or destroyed by cross-country ATV or snowmobile use as well. For some species, particularly amphibians, reptiles, small mammals, and some invertebrates, ATVs and snowmobiles can cause direct injury or mortality. Although some wildlife species seem to become conditioned to the presence of motorized vehicles, and will learn to tolerate the approach of a person in a vehicle more than a person on foot, these species will usually flee as soon if the vehicle stops or a person gets off the vehicle. People on ATVs and snowmobiles can cover a lot more ground in a day than can people on foot, and potentially disturb more wildlife over a wider area than can, for example, hikers. (USDA 1998e)

### **Water Access - facility level of development**

Water access sites impact wildlife species that are dependent on their access to and use of bodies of water. Sites with high facility development levels such as concrete plank ramps and associated facilities could have impacts similar to highly developed and used roads, creating a substantial break in natural habitat. Sites with low facility developed levels such as carry-in accesses or portages could have fewer impacts, particularly if the break in vegetation is very narrow and use of the facility is low.

## **Direct and Indirect Effects for Wildlife Recreation Impacts**

### **Public Access on Roads**

All alternatives would include the same miles of OML 3, 4, and 5 roads. Table RMV-4 identifies the potential for OHV use on existing OML 1, OML2, and unclassified roads by alternative. On the Chippewa NF, OHV use on unclassified roads would be prohibited in all of the action alternatives. On the Superior NF, OHV use on unclassified roads would be allowed in all alternatives, except Alternative D. On both Forests, OHV use could be allowed on OML 1 and OML 2 roads.

Motorized recreation opportunities on existing OML 1 roads would be reduced under all alternatives on both Forests. Motorized recreation opportunities on existing OML 2 roads on the Chippewa NF may also be reduced in all alternatives. In both cases, Alternative C would have the least reductions and Alternative D would have the most reduction. Motorized recreation opportunities on existing OML 2 roads on the Superior NF would be greatest in Alternative C and least in alternative D.

Relative differences between alternatives in terms of potential impacts to wildlife are reflected in the kinds and estimated low standard road opportunities. Alternatives that include the greatest potential opportunities for OHV use on low standard roads would generally have the greatest potential for wildlife impacts. See the discussions above for general wildlife impacts from recreation due to roads.

### **Motorized Summer (ATV) Trails - maximum miles of additional designated trail, and Motorized Winter (snowmobile) Trails - maximum miles of additional designated trail**

Table RMV-2 identifies the maximum mileage of additional designated ATV trail associated with each alternative. On both Forests, additional designated ATV trail is not proposed in Alternative D and the maximum potential new miles to meet current demand are proposed in Modified Alternative E.

Table RMV-3 identifies the maximum mileage of additional designated snowmobile trail associated with

each alternative. On both Forests, no additional designated snowmobile trails are proposed in Alternative D. Maximum potential new miles to meet current demand are proposed in Alternatives A, C, and Modified E on the Chippewa NF and in Modified Alternative E on the Superior NF.

Relative differences between alternatives in terms of potential impacts to wildlife are reflected in the maximum amount of new designated ATV and snowmobile trail allowed under each alternative. Alternatives that include the greatest potential increase in designated ATV and snowmobile trail mileage would generally have the greatest potential for wildlife impacts. See the discussions above for general wildlife impacts from recreation due to motorized trails.

### **Cross-country ATV and Snowmobile Use - level of use restriction**

Table RMV-5 identifies, by alternative, the level of use restriction on cross-country ATV and snowmobile travel on each Forest. (Cross-country OHM and ORV travel is prohibited in all alternatives.)

On the Chippewa NF, cross-country ATV and snowmobile use would be prohibited in Alternatives A, B, D, Modified E, F and G. In Alternative C, cross-country snowmobile use would be prohibited but cross-country ATV use only for big game retrieval and furbearer trapping access would be allowed.

On the Superior NF, cross-country ATV and snowmobile use is prohibited in Alternative D. In Alternatives B, Modified E, F, and G, cross-country ATV use would be prohibited throughout the Forest and cross-country snowmobile use would be allowed in most management areas. In Alternative C cross-country ATV use would be allowed only for big game retrieval and furbearer trapping access and cross-country snowmobile use would be allowed in most management areas. In Alternative A, cross-country ATV and snowmobile use are both allowed.

Relative differences between alternatives in terms of potential impacts to wildlife are reflected in the alternative-specific policies regarding cross-country ATV and snowmobile use. Alternatives which least restrict cross-country use would generally have the greatest potential for wildlife impacts. Conversely,

those alternatives that prohibit cross-country motorized travel would have only those impacts associated with road and trail use. See the discussions above for general wildlife impacts from recreation from ATV and snowmobile cross-country travel.

### **Water Access - facility level of development**

There are no differences between alternatives in terms of the maximum total number of new water access sites. Table WTA-7 identifies the maximum facility development levels for new water access sites that are associated with each alternative. Some differences in potential negative impacts to wildlife result from the alternative-specific maximum facility level of development for new water access sites. Alternatives A, C, and Modified E, that allow the highest facility development for new sites, would generally have the greatest potential for detrimental wildlife impacts. (Modified Alternative E differs from Alternative A and C in that facilities at smaller, more remote lakes would generally be limited to low development levels.) It is important to note that the number of new sites is a very small percentage (about one percent) of existing water access sites. Therefore, the magnitude of impact at a Forest-wide scale would be very small in any of the alternatives. See the discussions above for general wildlife impacts from recreation for water access sites.

### **Cumulative Effects for Wildlife Recreation Impacts**

#### **Public Access on Roads**

Cumulative effects related to wildlife are of the same type discussed as general impacts under effects common to all alternatives. Alternative D would have the least road related wildlife impacts and Alternatives A and C would have the most wildlife related impacts. The judgment of relative differences between alternatives is based on the discussion for direct and indirect effects along with the following information.

Road policies and estimates of relative availability of low standard roads for RMV use were not made past beyond the 10 - 15 year Plan implementation period. Road use for recreation needs (and thus wildlife

impacts potentially associated with use of low standard roads) beyond 15 years are impossible to predict because they would be dependant on demonstrated evidence (through monitoring of the road system) that low standard roads can be used by RMVs within acceptable levels of resource and social impact.

A current trend locally and nationally on all ownerships is to identify which low standard forest roads should remain open to motorized recreation uses. It is anticipated that fewer roads than are currently open would remain open in the future. It is also anticipated that maintenance and public information for where to ride would improve. Overall, road related impacts to wildlife may decrease in all alternatives when considering all ownerships during the Plan implementation period.

**Motorized Summer (ATV) Trails - maximum miles of additional designated trail, and Motorized Winter (snowmobile) Trails - maximum miles of additional designated trail**

Cumulative effects related to wildlife are of the same type discussed as general impacts under effects common to all alternatives. The judgment of relative differences between alternatives is based on the following factors which help to assess motorized trail impacts on a cumulative (as opposed to a direct and indirect) basis.

The maximum additional designated motorized trail miles associated with each alternative applies to the time period of the next 10 to 15 years. These effects are accounted for in the discussion of direct and indirect effects. Trail needs (and thus wildlife impacts potentially associated with additional designated trail) beyond 15 years are impossible to predict because they would be dependant upon demand that exists at that time and demonstrated evidence (through monitoring of the in-place trail system) that trails can be built and used within acceptable levels of resource and social impact.

Another relevant trend expected to be evident 5 to 10 years from now is that the *total* miles of available motorized recreation travel on roads and trails and routes (and thus open to potential wildlife impacts) is likely to either stay the same as, or decrease from, current levels. Federal, State, county and other land management agencies and entities are tending toward

regulating motorized use on roads and trails. In other words, regardless of alternative, the potential mileage gain in new trails on the National Forests is very likely to be offset by a reduction in *total* open roads and trails availability resulting from the increased trend toward “designation” of routes for motorized use.

From the cumulative effects discussion of demand for motorized trails (EIS section 3.8.3.b), Alternatives A, C, F, and G are not likely to completely meet the NFS share of anticipated demand. The resulting “shortfall” on NFS lands might be small enough that other landowners could reasonably pick up the slack to fully meet the demand. Some potential for wildlife impacts would be associated with this trail construction by other landowners. Alternatives B and D would contribute few or no miles of new trail on NFS land, and the “shortfall” would probably be large enough that other landowners would not be able to fully pick up the slack. Under Modified Alternative E, the Forests could contribute their full share toward meeting demand for new trails.

**Cross-country ATV and Snowmobile Use - level of use restriction**

The net affect on a cumulative basis as measured in the terms of the overall potential for wildlife impacts associated with cross-country ATV and snowmobile travel, on a relative basis between alternatives, are estimated to be no different than the direct or indirect effects. All alternatives (except Alternative C) on the Chippewa NF and Alternative D on the Superior NF would prohibit all cross-country ATV and snowmobile use. Alternative C on both Forests would allow cross-country ATV travel for big game retrieval and fur bearer trapping access. All alternatives, except Alternative D on the Superior would allow cross-country snowmobile travel.

Cumulative effects of concern related to wildlife are of the same type discussed as general impacts under effects common to all alternatives. The judgment of relative differences between alternatives is based on the discussion for direct and indirect effects along with the following information.

In those alternatives where cross-country use is prohibited on NFS land there would be some potential that people who now travel cross-country using ATVs and snowmobiles on the National Forests could be

displaced and concentrated on adjacent lands where cross-country use is allowed. The attendant levels of potential wildlife impacts associated with motorized cross-country travel could also increase on non-NFS land. Those alternatives that allow the most cross-country travel would contribute the most to cumulative wildlife impacts and those alternatives that allow the least cross-country travel would contribute the least.

### **Water Access - facility level of development**

The net affect on a cumulative basis as measured in the terms of the overall potential for wildlife impacts associated with new water access sites, on a relative basis between alternatives, are estimated to be no different than the direct or indirect effects.

Alternatives A, C, and Modified E would have the highest facility development level for potential new water access sites along with the larger potential for wildlife impacts and Alternative B and D would have the lowest.

Cumulative effects of concern related to wildlife are of the same type discussed as general impacts under effects common to all alternatives. The judgment of relative differences between alternatives is based on the discussion for direct and indirect effects along with the following information.

The maximum number of new water access sites (five on the Chippewa and ten on the Superior) are the same for each alternative (except for Alternative D on the Chippewa, where no new accesses would be constructed) and apply to the time period of the next 10-15 years. Beyond 15 years the need for, and development level of, new water accesses are impossible to predict because they would be dependant upon demand that exists at that time and demonstrated evidence (through monitoring of in-place accesses) that accesses can be built and used without unacceptable levels of resource and social impact.

As documented in the EIS Water Access section 3.8.4, many water access opportunities are currently provided on other public and private lands within the counties occupied by the Chippewa and Superior NFs. Statewide, the State of Minnesota is expected to annually construct about 5 new water access sites and reconstruct about 35 water access sites. This rate is expected to continue for the next ten years. The State focus during this ten year period is expected to be

expansion and rehabilitation of (e.g. generally increasing the development level of) existing sites to accommodate the increasing average size of boats and motors. This focus for water access development, and thus the associated level of potential impacts to wildlife, is likely to be nearly the same regardless of which forest plan revision alternative is selected because the number or potential new sites is so low in comparison to existing and proposed sites on all ownerships.